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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/964,911 | ZERBE ET AL. | |
| | Examiner | Art Unit | |
| | Juan A. Torres | 2631 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment - After Non-Final Rejection filed on 11/28/2005.
2. ☒ The allowed claim(s) is/are 27-41.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Allowable Subject Matter

Claims 27-41 allowed.

The following is an examiner's statement of reasons for allowance: claims 27-41 are allowed because the references cited fail to teach, as applicant has, a multi-PAM output driver having a plurality of current-control ports, a current-calibration circuit coupled to each of the current-control ports, the current-calibration circuit including a first, second, and third reference-voltage nodes, and a multi-level voltage generator including a voltage divider having first, second, third, and fourth resistors coupled in series to divide a reference voltage into a first multi-PAM reference voltage between the first and second resistors and coupled to the first reference-voltage node, a second multi-PAM reference voltage between the second and third resistors and coupled to the second reference-voltage node, and a third multi-PAM reference voltage between the third and fourth resistors and coupled to the third reference-voltage node, and an active current source having a current-handling terminal and a current-control terminal, wherein the current-handling terminal is coupled between two of the first, second, third, and fourth resistors; a current-calibration circuitry for a multi-PAM output driver comprising a current-calibration circuit including a first, second, and third reference-voltage nodes adapted to receive respective relatively high, medium, and low reference voltages, and a multi-level voltage generator adapted to produce the high, medium, and low reference voltages, the voltage generator including first and second voltage supply pins providing a reference voltage, a voltage divider having first, second, and third multi-

PAM reference terminals, the voltage divider dividing the reference voltage into a plurality of multi-PAM references, including a first multi-PAM reference voltage on the first multi-PAM reference terminal, a second multi-PAM reference voltage on the second multi-PAM reference terminal, and a third multi-PAM reference voltage on the third multi-PAM reference terminal; and an active current source drawing current from the first multi-PAM reference terminal to reduce the first multi-PAM reference voltage; and a shifting logic states to allow equalization signals to overdrive transitions between the logic states including shifting a multi-PAM reference voltages by drawing an offset current from one of the multi-PAM reference-voltage nodes, as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Juan Alberto Torres
12-12-2005


KEVIN BURD
PRIMARY EXAMINER